Strokes of a Garden Gate

Chanmi Hwang, Iowa State University, USA

Keywords: New technologies, Textile innovation, Sustainability

Women Size 6: Bust (34.5”), Waist (25.5”), Hip (36”)

Contextual Review and Concept: In recent years, computer aided design (CAD) technology has become a standard tool for designers to ideate their design concepts and sketch directly on the computer screen. Thus, the opportunity to alter colors, change scale, and repeat forms is greatly enhanced once the design exists in the virtual domain (Treadaway 2004). This provides opportunity for intervention in the design process prior to manufacture (Park & DeLong, 2009). Specifically, virtual product development refers to procedures that integrate the computer aided engineering tools in a unified approach that spans all the product development phases (Omar, 2014). Thus, the purpose of this design was to virtually create a prototype in Optitex PDS12 2D/3D and design an engineered garment that incorporate design techniques such as digital printing and laser cutting to explore the effects of depths within a dress.

Aesthetic Properties and Visual Impact: The source of inspiration was a caged garden gate. The patterns of the gate were laser cut and placed on top of the digitally printed floral petal prints. To create the effects of depths, the designer explored hues and gradation effects of the colors: through the negative space of the laser cut patterns, the printed patterns can be seen, creating depths. The laser cut patterns were designed by overlapping numerous circles of different sizes, and the designed patterns in two dimensional was strategically placed on the virtual patterns to fit three dimensional form of the body in Illustrator software. The silhouette of the dress is a simple sleeveless structured shape so it can integrate well with complex pattern works. It has eight godet pieces inserted in the hem of the skirt for the fullness of the dress.

Process, Technique, and Execution: The design and construction process for the dress include: 1) creating the garment pattern pieces on OptiTex PDS 2D/3D, 2) creating engineered textile prints in Adobe Photoshop for digitally printed underdress, 3) designing the engineered prints for laser cut in Adobe Illustrator for the laser cut over dress, 4) merging the Opti-tex patterns with both patterns to engineer the layout of the patterns, 5) printing the dress fabric using the Mimaki TX2-1600 printer on the 100% cotton sateen, 6) steaming and washing the printed fabrics to prevent the color from fading, 7) laser cut the fabric through Trotec Laser Cutter on navy Ponte knit, and 8) constructing the garment. The laser cut patterns were attached to the digitally printed patterns by machine stitching the edges of the patterns together.

Cohesion/ Design Contribution and Innovation: This design contributes to a new way of integrating emerging technologies into an innovative design process. Especially, the virtual prototyping design process was actively used where from the initial ideas to final look, the designer could visualize on screen before actually constructing the garment. Documentation of this process

can give new insights on the use of 2D and 3D by apparel design and product development students. Current industrial trends utilize virtual product development tools and procedures to reduce the product development time without jeopardizing the product quality. This design also provides new insights on creating depths within a dress, a new way of applying technologies and creativity into one complex garment.

References

Omar, M. A. (2014). Design and implementation of a capstone course to satisfy the industry needs of virtual product development and ABET engineering criteria. Retrieved from http://www.hindawi.com/journals/edri/2014/578148/

Park, J., & DeLong, M. (2009). Understanding new technology adoption in the apparel and footwear industry within a social framework: a case of rapid prototyping technology. *International Journal of Fashion Design, Technology and Education*, *2*(3), 101-112.

Treadaway, C. (2004). Digital Imagination: the impact of digital imaging on printed textiles. *Textile*, *2*(3), 256-273.

Front View

Back View

Detail 1

Detail 2